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Case Report

Bilateral, Spontaneous, None-traumatic Dislocation of Posterior Chamber Intraocular Lens in a Patient with Retinitis Pigmentosa: A Case Report

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Abstract

A 39-year-old man with retinitis pigmentosa (RP), who had undergone uneventful bilateral phacoemulsification ten years previously, had spontaneously dislocated intraocular lenses (IOL) within the capsular bag in both eyes two years apart. We removed the dislocated IOLs, and performed parsplanavitrectomy for the left eye, anterior vitrectomy for the right eye, and finally scleral fixation of the new IOLs. Mild of the capsular bags contraction and uneven distribution of the zonular clumps along the equator of the capsules were noted in both eyes. To our knowledge, this is the first case report of bilateral spontaneous dislocation of IOLs within the capsular bag of an RP patient in Palestine. This event raises the issue of possible IOL dislocation in RP patients, a complication that could extend to a decade after the initial operation.

Keywords: Retinitis Pigmentosa; Phacoemulsification; Intraocular Lens Dislocation; Zonular Weakness; Capsular Bags Contraction

Introduction

Retinitis pigmentosa (RP), or pigmentary retinal dystrophy, denotes a clinically and genetically diverse group of inherited diffuse retinal degenerative diseases that initially predominantly affecting the rod photoreceptors, with later degeneration of cones (rod-cone dystrophy). The condition is characterized by peripheral and night vision loss and has the classical triad of arteriolar attenuation, bone spicule pigmentation, and waxy disc pallor [1]. A common sign of RP is the posterior subcapsular cataract, which develops at a relatively earlier age [2]. Cataract surgery is often required and patients may have a major improvement in visual acuity after cataract surgery provided the macula retains some visual function [3]. IOL dislocation or subluxation is a devastating complication that may follow cataract operation, its incidence ranges from 0.2% to 3.0% [4,5]. Various mechanisms have been postulated, which include vitreous degeneration, capsular shrinkage and zonular weakness or dehiscence [6].

Here we report a case of both eyes of RP patient who developed dislocated IOL ten years later following uneventful phacoemulsification with in-the-bag IOL implantation.

Case Report

A 39-year-old man with a history of RP presented with left eye drop of visual acuity. Ten years before, he underwent bilateral uneventful phacoemulsification with in the bag single piece posterior chamber intraocular lens (PCIOL) implantation. He reported a progressive drop of visual acuity over two months and severe eye pain in the last two days, he denied any history of eye or head trauma or any ocular procedure other than phacoemulsification. RP was first diagnosed at the time of cataract surgery 10 years ago. He admitted a medical history of inflammatory bowel disease (IBD) controlled by mesalamine.

Ophthalmic examination revealed right eye visual acuity (VA) of 0.3 (Decimal) and left eye of counting fingers at 3 meters with no improvement in refraction in both eyes. Slit-lamp examination showed left eye grade 2 corneal edema, complete in bag IOL dislocation to AC, anterior capsular contraction, and intraocular pressure (IOP) of 60 mm Hg and hazy fundus view. B-scan ultrasound showed flat retina and no vitreous opacities. The right eye showed stable well-positioned in bag IOL, fundus bony spicules with macular sparing, and attenuation of blood vessels figuring out features of RP. He was admitted to hospital, his IOP was managed with intravenous 500 cc mannitol 5% and oral acetazolamide 500 mg. Then the patient was operated by IOL removal, parsplanavitrectomy (PPV), and scleral fixated intraocular lens (SFIOL), during surgery uneven distribution of zonular clumps were noted. His follow up shows an improvement of VA to 0.3 by the first week and 0.7 by second-week postoperatively.

Figure 1: A) Anterior segment image of the right eye showing IOL superior haptic evolving to AC subluxation pre-op; B) Anterior segment image of the right eye post-op.

Two years later, he suffered right eye discomfort, his VA was 0.3 in the right eye and 0.7 in the left eye with no improvement in refraction in both eyes. Examination showed right eye subluxated IOL with IOL superior haptic evolving to AC but not touching cornea (Figure 1A) while the other haptic remains in the bag, milder capsular contraction, and IOP was 14 mm Hg. The left eye showed stable well-positioned SFIOL. The patient was operated electively with IOL removal, anterior vitrectomy (AV), and SFIOL (Figure 1B). Postoperatively, the right eye VA dropped to 0.05 due to cystoid macular edema (CME). The patient was prescribed oral acetazolamide 250 mg once daily, topical ketorolac tromethamine solution (0.45%) three times daily and topical prednisolone acetate (1%) three times daily all for 2 months, after which visual acuity raised back to 0.3 again.

Discussion

RP is one of the risk factors for dislocation or subluxation of PCIOL following phacoemulsification [7]. It can present as early as weeks to as late as many years after surgery [8,9].

Various hypotheses have been postulated to be related to IOL dislocation or subluxation, such as zonular weakness, anterior capsular contraction, and vitreous degenerations [7]. Phacoemulsification process itself may further aggravate zonular weakness [7], and doing small continuous capsulorrhexis can lead to anterior capsular contraction [10], both issues add insult to injury in case of IOL dislocation in RP patients. Once subluxation or dislocation happened, IOL explanation should be performed together with secondary IOL implantation. However, subluxated IOL remaining in the visual axis can be observed [11]. Generally, indications of surgical intervention include a reduction in visual acuity, diplopia, glaucoma, risk of corneal decompensation, or retinal detachment [12]. The most common popular options include ACIOL or SFIOL.

SFIOL should be considered in patients with no capsular or iris support, shallow anterior chamber, or corneal endothelial problems. It has generally favorable outcomes [13]. Placement of ACIOL is much easier than SFIOL but associated with the risk of high intraocular pressure and corneal decompensation. Several studies had compared the outcome of both techniques, both with its advantages and disadvantages [14,15].

Some studies have reported higher complications in PSFIOL compare to ACIOL. Other studies, however, suggested there was no significant difference between both techniques [14,15]. In the context of this dilemma, placement of each type of IOL should be individualized to each clinical presentation per se.

Our case presented with glaucoma in one eye and high risk of corneal decompensation in the fellow eye so surgery was indicated. SFIOL was chosen due to the lower risk of corneal decompensation, angle-closure, and the relatively young age of the patient. Capsular contraction and uneven zonular tension could be blamed for patient presentation.

Conclusion

In summary, PCIOL dislocation following phacoemulsification in RP patients is uncommon but still occurring complication that

both surgeons and patients should be aware of its existence and future management options. It can occur in both patient eyes at separate times. To our first knowledge, it is the first case to be reported in Palestine.

Conflict of Interest

No conflict of interest was declared by the authors.

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